ELN Mines and FARC Mortars:

IEDs in Colombia

by Charles H. Briscoe

In the early morning of 1 November 2006, a hundred FARC-EP (*Fuerzas Armadas Revolucionarias de Colombia-Éjercito del Pueblo*) guerrillas began their attack against the newly rebuilt police station in Tierradentro, a remote village near the National Archeological Park, Department of Córdoba, 230 miles northwest of Bogotá. A ground assault followed a bombardment of explosive-filled propane gas cylinders—a favored FARC weapon. They are inaccurate and cause considerable collateral damage. In the bloodiest attack since President Alvaro Uribe Vélez was re-elected, sixteen police, one civilian, and three rebels were killed.[1]

President Alvaro Uribe Vélez

The Colombian chief executive was personally familiar with FARC mortars because fourteen were fired at the presidential palace during his inauguration in August 2002. One ricocheted off an outer wall. None exploded inside the compound where 600 dignitaries were assembled, but twenty-one people were killed when the projectiles landed in an adjacent neighborhood.[2]

The *Veritas* 2:1 article, *"Los Artefactos Explosivos Improvisados:* Spanish for IEDs (Improvised Explosive Devices)," discussed field expedient explosives and mines that were employed by the FMLN (*Frente Farabundo Martí para la Liberación Nacional*) during the 1982–1993 war in El Salvador. Loss of limb casualties (amputees), military and civilian, from anti-personnel land mines called *quita patas* (foot removers) and IEDs numbered nearly 10,000 in 1990.[3] However, after almost sixty years of internal conflict, Colombia is now the country most affected by land mines and IEDs in the Americas.[4] By 2003, Colombia had become the nation with the third largest number of mine victims in the world. Afghanistan and Cambodia rank first and second, respectively. El Salvador is fourth.[5]

On 24 October 2004, the Colombian armed forces completed their destruction of stockpiled anti-personnel mines in compliance with the international Mine Ban Treaty (MBT). But, in Colombia today, non-state armed groups, most notably the FARC-EP (FARC) and the UC-ELN [*Unión Camilista–Ejército de Liberación Nacional* (ELN)], continue to employ anti-personnel mines and IEDs on a regular basis. These homemade weapons are second and third generation improved IEDs compared to what was employed in El Salvador. Explosive weights are much greater and the shrapnel infinitely "dirtier."[6]

ELN flag

FARC flag

Graphic gross mutilation has a much greater psychological impact than the simple maiming sought by the FMLN. IEDs and land mines accounted for 30 percent of the Colombian Army soldiers killed and 40 percent of the wounded in 2004.[7] In the first three months of 2005, one of three Colombian soldiers killed was a mine or IED victim. The year ended with 1,110 IED casualties. The number has grown steadily; from 627 in 2002, to 734

in 2003, to 882 in 2004.[8] The problem in Colombia is an overwhelmingly rural one. As of June 2006, 96 percent of the incidents had taken place in the countryside.[9]

The purpose of this article is to show how the "New Generation" of two specific IEDs favored by the FARC and the ELN are significantly more lethal than those used by the FMLN in El Salvador. While the FARC also employs land mines, the ELN groups are most noted for them. The favorite FARC terror weapon, having contracted explosives training from the Provisional Irish Republican Army (IRA), is the propane gas cylinder mortar (*la bomba barbacoa*—barbecue bomb).

Allegations of a FARC-IRA connection arose after Interpol confirmed that the three Irishmen arrested in Bogotá on 11 August 2001—James Monaghan, Martin McCauley, and Neil Connolly—were IRA members. Monaghan is credited with designing the IRA homemade mortar. It was originally developed with Libyan help in the early 1970s. The primitive Mark 1 evolved over time into the much more sophisticated Mark 18 "Barracks Buster," named for its destructive effect on British bases in Northern Ireland. The weapon earned the designer the moniker "Mortar Monaghan." McCauley and Connolly are reported to be among the best explosive/bomb men in the IRA. Long-range (2,000 meters) propane mortars are mounted in vehicles, called "technicals" by U.S. troops, in the manner of the Somali pickup trucks with crew-served weapon systems.[10] Colonel Nelson Francisco Rocha, Director of the Colombian Military Engineer School, confirmed that the "FARC mortars" were amazingly similar to IRA "barracks-busters" and that the FARC was producing electric detonators and using black-powder impulse charges."[11]

La bomba barbacoa and its launcher are crude, but ingeniously simple.

Bombas barbacoa *and simple tube launcher on bipod at Espinal.*

Schematic of bomba barbacoa.

Illustration by Dan Telles

Artist facsimile drawing of a "technical" mounted with bombas barbacoa.

The projectiles are made from common twenty-pound propane gas cylinders. Millions of Colombians use propane gas for cooking and heating, making the supply of tanks plentiful and easily available. The larger hundred-pound tanks serve as the mortar/launcher after their tops have been cut off and a supporting bipod welded on. Crude sheet iron fins are welded to the smaller twenty-pound tank tops to provide some stability in flight (see photos). Through a hole cut in the top or bottom, up to twelve pounds of homemade explosive are poured in and cushioned with sawdust. Sometimes gasoline and glue are added to make them more inflammatory. Tear gas powder is another option. They are time-fuzed with non-electric detonators to land before exploding. A wadded-up burlap sack in the mortar tube (hundred-pound propane tank) separates the propellant black powder from the base of the *bomba barbacoa*. Elec-

Non-slip pattern sheet iron (commonly used to make custom step-ups on U.S. trucks) fins for a bomba barbacoa.

Small bomba barbacoa.

Mortar tube and bomba barbacoa.

Detonator

Schematic of FMLN artilleria sin cañon.

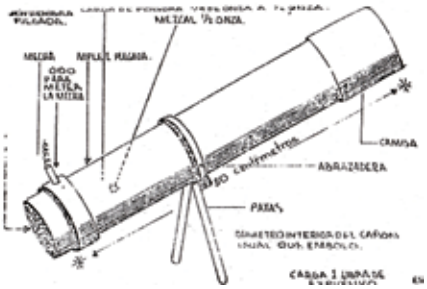
A close-up of artilleria sin cañon rampas *showing wooden launchers with adjustable legs to set elevation. Earth was tamped against the backplate.*

trical detonators fire the propulsion charge and activate the time fuse in the projectile.[12]

Colombian explosive experts have demonstrated that when fired at an elevation of sixty degrees, *la bomba barbacoa* can reach 2,000 meters. Normal combat employment ranges are 300 to 1,000 meters. They are normally fired *en masse*, as were the FMLN *rampas*, to accomplish what a conventional artillery or mortar pre-attack concentration of fire would. But, *en masse* by the FARC equates to several hundred *bombas barbacoa*, fired from mobile and fixed launchers, rather than forty or fifty *rampas. Las bombas* are inaccurate. Most buildings within fifty meters of the intended target are usually heavily damaged. The inaccuracy, shrieking noise when launched, destructive effect on buildings and bunkers, and shrapnel make them true terror weapons. They have become a trademark feature of FARC attacks on rural police stations and army garrisons.[13]

While they differ radically from FMLN *rampas*, tactical employment and launching are similar. The lack of artillery to support FMLN attacks prompted the development of a primitive inclined fixed-direction system. These direct-lay artillery systems, called *artilleria sin cañon* (artillery without cannons) were popularly called *rampas* or ramps, based on the simple incline launch platforms. *Rampas* were grouped *en masse* to launch barrages of explosive "cannonballs" into Salvadoran Army *cuartels* (garrisons).[14]

Following a thunderous explosion, ten to twenty cloth-wrapped balls, barely illuminated in the night sky by their burning detonation cord, would come flying over the walls. The explosive "cannon balls," bouncing and rolling along the ground with fuses burning, were reminiscent of the bearded and mustachioed *Yosemite Sam* using an old cannon to get rid of that "pesky wabbit" in a *Bugs Bunny* cartoon.[15] Curiosity and laughter about the comic absurdity of this innovation ended quickly, as those close to a fizzling cannon ball realized the



FMLN mortar tube.

FMLN battery of rampas *outside the 4th Brigade at El Paraiso, El Salvador, in 1988.*

Various styles of IED mortars.

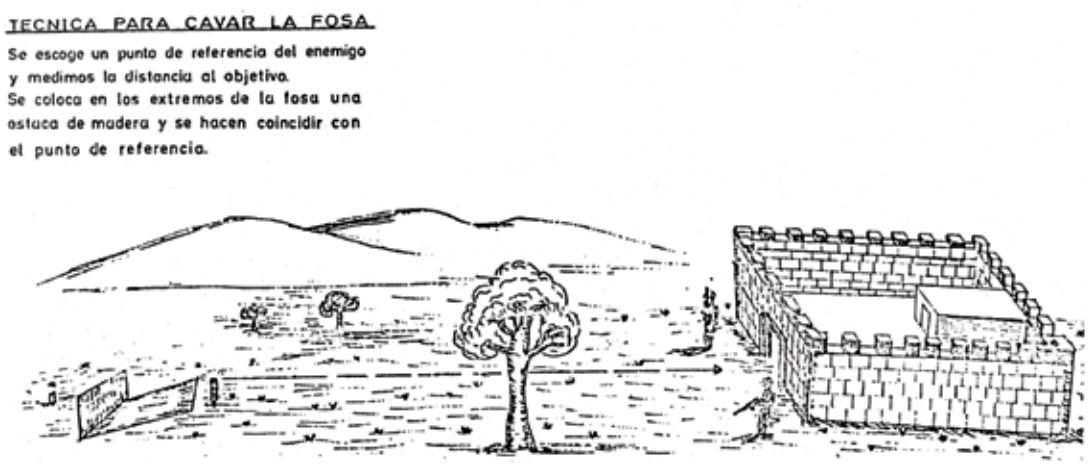
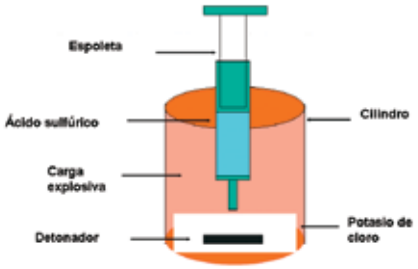
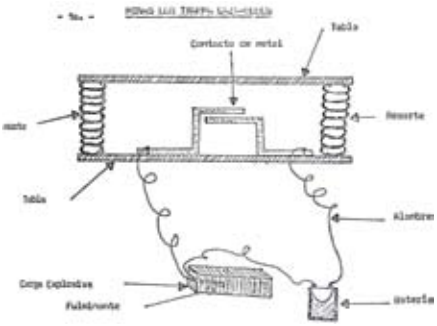


Diagram of how to emplace a Rampa *Battery.*



ELN Pressure IED schematic.



FMLN pressure anti-personnel mine (FMLN pressure mine).

ELN Pressure Anti-Personnel IEDs (Pressure IEDs Detonators) above and below.

danger and dived for cover.[16]

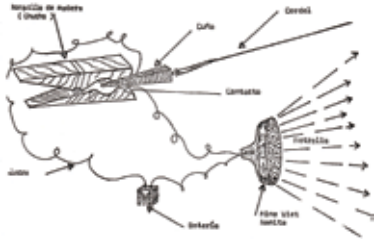
Fortunately, the dud rate was high. The "cannon balls" were made of a hardened paste mixture of powdered chlorate, aluminum, and black gunpowder with rocks and scrap metal for shrapnel, wrapped in strips of cloth (a Nicaraguan Sandinista trademark).[17] While duds were a problem with the *rampas*, that has not been the case with FARC mortars, with the exception of those mounted on "technicals," that often self-destruct. The IED land mines, called *minas cumbos* and *minas vuela-patas* (pressure-activated mines and "flying feet" mines), are consistently more reliable.

As ELN terror weapons, these mines are most commonly placed along routes used by Colombian military and police forces, around their camps, and helicopter landing zones. They have also been used around schools, along village streets and paths, near water sources, bridges, housing areas, and illicit drug fields.[18] Home-crafted mines *(minas artesanales)* are made from beer/soda/juice cans, PVC pipe, glass jars, milk containers, and wooden boxes. Syringes serve as pressure activators. They have non-electric and electric fuses, and sometimes there are anti-handling devices.[19]

Minas cumbos and *minas vuela-patas* are detonated by a syringe whose rubber seal has been removed and replaced with a metal contact point. When a soldier/civilian steps on the mine, the syringe is depressed, contact is made, and the device activates. They are very simple to make and inexpensive—less than $7 each. Most are mass-produced in company-level factories. Since they take only seconds to emplace, FARC/ELN-paid trail-watching children can run ahead of the patrols and quickly place a mine in their path.[20] Both the FARC and ELN justify their continued use of land mines.

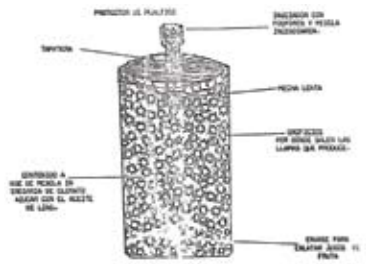
In April 2006, ELN representative Antonio García stated that the ELN "complied with international norms against . . . indiscriminate use" of land mines with a qualification: "When we do mine, we do not do it on roads, nor in populated areas."[21] A year earlier, in January 2005, the Central Command of the FARC issued a statement defending its use of anti-personnel mines on the grounds that it was fighting an adversary with more resources.[22] The FMLN broadcast a similar policy during the war in El Salvador.

FMLN *Radio Venceremos* admitted responsibility for indiscriminate land mine warfare with the declaration that it was "an integral part of their revolutionary strategy. Mines worked. The only problem was that a mine could not tell the difference between a six-year-old child and an armed combatant."[23]



FMLN Chinese Hat tripwire activated anti-personnel IED.

ELN fruit juice anti-personnel IED.



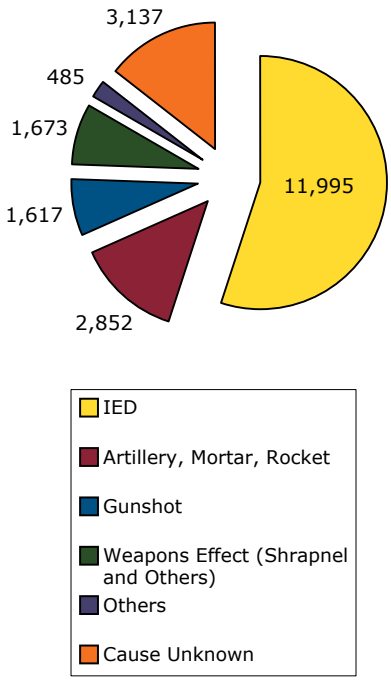
Schematic of Salvadoran FMLN Soda or Fruit Juice Can anti-personnel mine.

FMLN Radio Venceremos.

El Salvadoran FMLN Comandantes *Lionel Gonzalez (left), Dimas Rodríguez (center), and Facundo Guardado.*

Salvadoran amputee child poster that greeted every visitor at the International Airport in San Salvador during the latter stages of the war.

Total U.S. IED Injuries
March 2003 to 15 September 2006[27]



The government of El Salvador focused a very effective national PSYOP campaign on this admission.

The rapidly increasing number of Colombian IED casualties is linked in part to the government's policy of eradicating coca fields and reclaiming FARC and ELN-controlled land under *Plan Patriota*. Greater use of mines was justified by the FARC and ELN to protect their camps and coca fields. Most of the casualties are military, but also include civilians hired by the Army to clear the coca fields. This practice began after a booby-trapped land mine incident killed twenty-nine soldiers. Guerrilla snipers capitalized on the situation and shot at the collected medics.[24] The FARC used *Plan Patriota* operational areas as a training ground by rotating in elements from all parts of the country into the region. There, they practiced tactics of attrition, harassment, and IED use and kept pressure on the security forces.[25] The Colombian military uses explosive detection dogs to find IEDs, but often both the handler and dog become casualties.[26]

Improvised explosive devices, whether used in an urban or field environment, are standard guerrilla weapons. The majority of our combat casualties in Iraq (3,000 deaths versus more than 10,000 wounded) and Afghanistan have been caused by IEDs. The same is true for the Colombian armed forces engaged in the counter-narco-terrorist war, as it also was for the Salvadoran military fight against the FMLN. Simple field expedient IEDs made from fertilizer chemicals, rebar rods, scrap metal, and rocks—"2nd and 3rd generation homemade munitions" employed by the FARC and ELN—should not be discounted. When the supply of conventional munitions are reduced in Afghanistan and Iraq, more primitive, but equally deadly IEDs will take their place. Supplemental funding from the Defense Department has significantly expanded the countermining program administered by the Army Section of the U.S. Military Group (USMILGP) Colombia.

The Army Section has an Engineer major dedicated to support the Colombian military with countermine equipment and tools, assist with its countermine and IED program of instruction, and train soldiers to identify, detect, and destroy land mines and booby traps used by narco-terrorists and guerrilla groups. USMILGP Colombia is computer-linked to the U.S. Army IED Task Force in the Pentagon. U.S. Defense supplemental funding for Colombia grew from $500,000 in fiscal year 2004, to $1 million in fiscal year 2005, to $1.5 Million in fiscal year 2006. The United Kingdom, Canada, Japan, Spain,

and Switzerland similarly fund other Mine Ban Treaty programs.[28]

The IED training manual used by the FMLN in El Salvador was a photocopied or mimeographed edition of hand-drawn sketches. FARC and ELN IED training manuals today are professionally written, commercially published textbooks. Terror training has become a very sophisticated business in the 21st Century.

The choice weapon of terror for an insurgent is an IED because the risk to the user is minimal. When IEDs are employed against civilians in Spain, Northern Ireland, Israel, Iraq, the Philippines, England, and the United States, they are simply called bombs. However, to an American or Colombian serviceman, FARC *bombas barbacoas* and ELN *minas cumbos* and *minas-vuela patas* are IEDs in another insurgent war.

**Pseudonyms have been used for all military personnel with a rank lower than lieutenant colonel.*

Endnotes

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15 Parker interview.

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